MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2016/2017 SESSION

TOS 2581 – OPERATING SYSTEM AND INTERNETWORKING

(All Sections / Groups)

26 MAY 2017
9:00 A.M – 11:00 A.M
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 4 printed pages including cover page with 6 questions only.

2. Attempt **SIX** out of **SIX** questions. All questions carry equal marks and the distribution of marks for each question is given.

3. Please write all your answer in the Answer Booklet provided.

Question 1 [10 marks]

(a) Explain how Direct Memory Access (DMA) I/O is more efficient than Interrupt Driven I/O. [2 marks]

(b) List down three goals of I/O Software. [3 marks]

(c) What is the function of a device driver from the Operating System's perspective? [3 marks]

(d) What is the difference between multiprocessor system, multicomputer system and distributed system in terms of device location and inter-node communication? [2 marks]

Question 2 [10 marks]

(a) Give one limitation of Network Operating System (NOS) compared to DO/S (Distributed Operating System). [2 marks]

(b) List down three factors that affect the selection of Network Operating System (NOS). [3 marks]

(c) List down three features in DO /S that are not available in NOS. [3 marks]

(d) Explain two different ways to design a DO/S. [2 marks]

Question 3 [10 marks]

(a) Give three reasons for the motivation of a distributed system. [3 marks]

(b) Dead-lock in resource allocation exists only if all the four conditions are met. List down these four conditions. [2 marks]

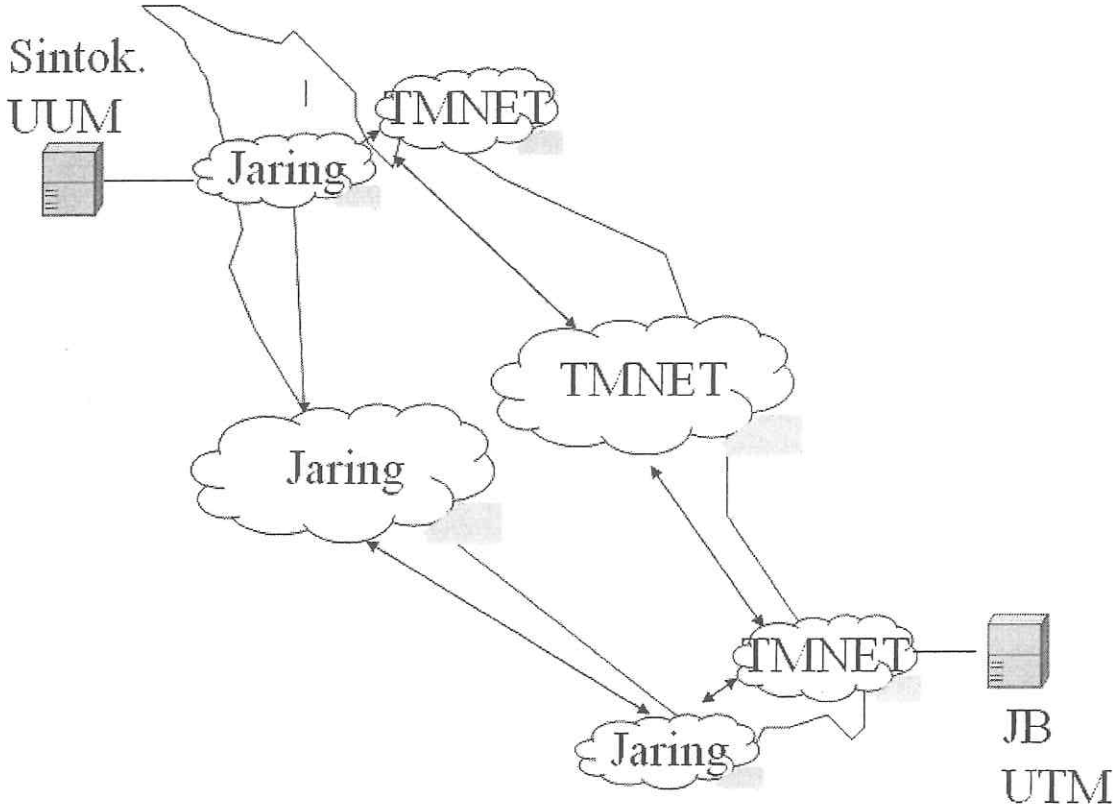
(c) Explain the differences between SSTF (Shortest Service Time First) and SCAN in disk scheduling policy. [3 marks]

(d) What is the function of Optical Network Terminator in Fibre to the home network? [2 marks]

Continued...

Question 4 [10 marks]

(a) Given the network below.



A UUM user would like to send a packet to a UTM Server. UTM is connected to TMNET service provider and UUM is connected to Jaring service provider. Which route will be used to send the packet from UUM to UTM and why?

[3 marks]

(b) Why is Address Resolution Protocol required in an IPv4 Ethernet network?

[2 marks]

(c) Draw a network diagram and explain how CIDR can prevent route flapping.

[3 marks]

(d) Give two benefits of VLAN.

[2 marks]

Continued...

Question 5 [10 marks]

(a) What is the function of the Extended Address Bit in Frame Relay header?

[2 marks]

(b) Give two disadvantages of ATM?

[2 marks]

(c) What will happen to TCP congestion windows when a TCP sender received three duplicate ACK? [2 marks]

(d) Explain why the overall efficiency of TCP is lower when multiple different paths are used to load balance the traffic.

[2 marks]

(e) Explain how admission policy in switch/router is able to prevent traffic congestion.

[2 marks]

Question 6 [10 marks]

(a) Explain what kind of queue scheduling policy is suitable for voice traffic.

[2 marks]

(b) Explain how md5 is used to secure the routing updates between routers.

[3 marks]

(c) Why is it recommended to use ssh instead of telnet when accessing a remote Unix machine?

[2 marks]

(d) Give three examples of Performance Management in SNMP?

[3 marks]

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